Data integration solutions
Whitepaper

WebSphere software

Achieving advantage with operational customer data integration and management

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Executive summary

As a part of the IBM master data management (MDM) family of products, IBM WebSphere® Customer Center provides the strategic architecture that companies need to solve their enterprise customer management issues and realize the full benefit of their investments in customer relationship management (CRM). It is one of the most robust, fully functional and proven customer data integration (CDI) solution available today. WebSphere Customer Center manages master customer data and provides it to business applications through business services. WebSphere Customer Center is a pure service-oriented business application that is designed to be integrated with all business applications and process-management tools in both real-time and batch mode.

This white paper provides details on why WebSphere Customer Center is the recognized leader in the transaction hub CDI market, including the following details:

- *WebSphere Customer Center is one of the most comprehensive functionality of any commercially available CDI solution. Its broad set of functionality means that organizations can derive more out-of–the-box benefit from WebSphere Customer Center than from other CDI applications.*

- *WebSphere Customer Center is one of the leading CDI solution in terms of performance and scalability and has proven performance benchmark results and implementation references.*

- *WebSphere Customer Center is one of the only CDI solution that is neutral to front- and back-office systems and business processes. Unlike CDI solutions that are pared from customer relationship management (CRM) or enterprise resource planning (ERP) application suites, WebSphere Customer Center is designed as a service-oriented, process-neutral application.*

- *WebSphere Customer Center is easy to configure, customize and extend. Organizations can implement WebSphere Customer Center with standard Java™ development tools, resulting in a lower total cost of ownership (TCO) than proprietary CDI solutions that might be difficult to extend and customize using proprietary toolsets and expensive consulting resources.*

- *WebSphere Customer Center is built on a leading technology platform with a truly componentized, service oriented architecture (SOA).*

- *WebSphere Customer Center contains integration points within the application that allow clients to integrate vendor applications within the business services (transactions). Predefined integration points and productized adapters in WebSphere Customer Center can help lower integration costs.*

This paper explains why establishing an operational customer data management solution is a critical aspect of a customer-centric business strategy. It will also explain why WebSphere Customer Center is the best-of-breed CDI solution that has been selected by leading organizations as their strategic platform for CDI.

Introduction

Market conditions are driving organizations to become more customer-centric. Organizations recognize the need to put the customer at the center of their operational business processes and move away from their traditional product-centric approach in order to achieve a customer-service differentiation strategy. The ability to inject customer knowledge and insight into operational transactions in real time is the basis of an effective customer service and sales strategy. Aside from the cultural and business challenges involved in that transformation, organizations have to overcome many technical challenges in order to achieve true customer centricity.

From a technology perspective, the biggest challenge of implementing customer-centric operational processes is the fact that customer information is stored in multiple, siloed line of business (LOB) systems. Even within an LOB, there exist several back-office product-focused systems and potentially several front-office, or customer-facing, solutions, all of which contain customer information. This results in fragmented customer information across multiple systems, generating several versions of the truth for each customer.

Organizations have attempted to solve their master customer data management problems by implementing CRM, data warehouses and customer information file (CIF) systems. CRM systems are designed to manage specific customer-facing processes (sales, customer service, marketing); however, CRM solutions are reliant on good customer data in order to be effective. The fundamental problem of CRM solutions is poor customer data. CRM systems are not designed to manage customer data and customer transactions across all systems in the enterprise, and are therefore reliant on receiving data from other systems in the enterprise. Without a single view of the customer to provide to CRM applications, organizations do not realize the promise and value of CRM, which is to truly achieve customer-centric sales and service processes.

Organizations have implemented CIFs or operation data stores (ODSs) to provide better customer data to their CRM systems and other front-office channels. The problem with CIFs is that they do not manage the complete customer relationship. Most CIFs cannot easily accommodate all product lines and channels. They typically do not maintain new customer data such as data on customer relationships, interaction history, privacy preferences, campaigns and events. CIFs and ODSs usually have view-only functionality, so channels can see customer information but there are no business services to update this information. Although CIFs and ODSs provide a view of

customer data, they do not address the fundamental process issue around managing master customer data because they do not provide business services for customer data management.

In order to make the transformation to a true customer-centric model, organizations must consolidate customer knowledge and insight from back- and front-office silos to an enterprise level. That knowledge should be shared across all systems as a set of customer-centric business processes and services. Organizations can become customer-centric by implementing an enterprise-wide CDI solution. The enterprise customer hub is the foundation for an operational customer-centric service and sales strategy. By organizing business processes around customers, having knowledge and insight of customers and their service and product profiles, and by implementing customer-management business services as part of operational business processes, organizations can transform their processes to be customer-centric. Customer-centric operations enable organizations to achieve strategic business objectives of increasing revenue and customer share, improving efficiency to reduce administrative costs, improving risk management, reducing merger and acquisition time and costs, and achieve privacy legislative compliance.

The master data management and customer data integration landscape

Organizations have implemented numerous options in the pursuit of "customer-centricity." These solutions have added some incremental value and have allowed organizations to gain a slightly improved understanding of their customers; however, these solutions have fallen short of delivering customer-centricity. Some of these solutions are complementary to CDI hubs, and the integration points are described in the following sections (see Figure 1).

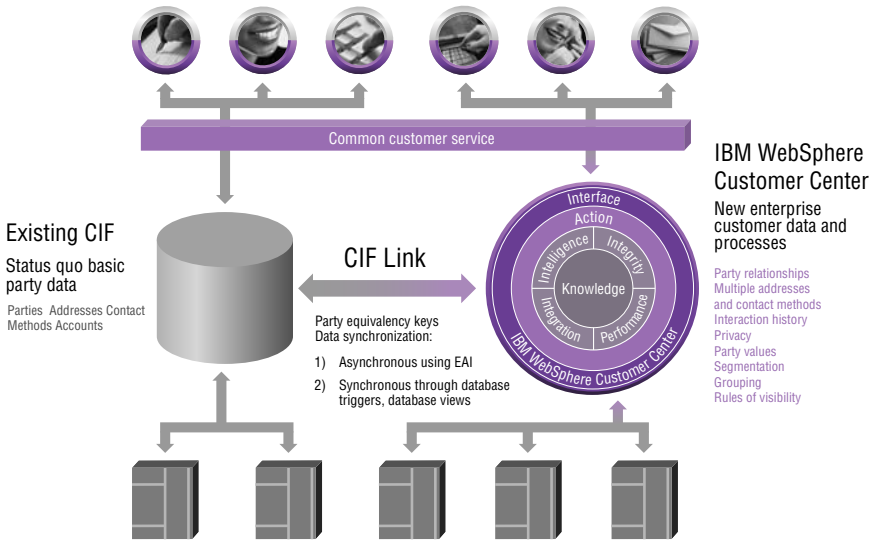


Figure 1. The master data management and customer data integration landscape

CIFs and ODSs

CIFs are not usually deployed across all product lines and channels. CIFs and ODSs typically contain view-only functionality. They are maintained with a continuous batch feed (data extractions, matching and loading) of customer data from a limited set of systems. Because they lack operational functions (business services) and business logic to manage customer data updates in real time, CIFs and ODSs cannot maintain a single version of the customer truth. CIFs are usually based on old technology, and are inflexible and difficult to adapt to new requirements. As such, most CIFs are not deployed across all product lines because of their inability to support new product requirements. CIFs do not persist "new" enterprise customer data, such as customer relationships, privacy profiles, interaction history, campaigns and events, among other items. In addition, CIFs do not contain new enterprise business processes, such as composite customer transactions (new business processing), event management, rules of visibility and data entitlements, and

duplicate suspect processing. CIFs do contain some customer knowledge and are integrated with some existing systems. WebSphere Customer Center can be integrated with an existing CIF in a number of ways. WebSphere Customer Center can sit on top of several CIFs to provide the enterprise a common customer view. It can also be used to manage real-time customer data updates, while keeping the CIFs in synch with any changes. WebSphere Customer Center can also be deployed to manage "new" customer information – to take marketing insight and knowledge and provide that to all channels and systems.

CRM

Organizations have implemented CRM solutions to manage customer-facing processes such as sales and customer service. The important point to note is that the primary purpose of those systems is to manage those processes (call scripts and interactions, sales pipeline management and so on), but they are not designed to manage customer transactions and data integration in real time. CRM suites are not designed in an SOA, meaning that they are unable to manage business logic and transactions through application programming (API) interface services. CRM solutions APIs are offered at a coarse level, do not expose granular functions and their design point is based on loading data into the CRM database, not on managing customer transactions. As such, CRM systems are consumers of customer data, not the managers of that data. Some CRM vendors have attempted to repackage their CRM databases and market them as CDI solutions. There are several concerns with this approach to CDI application development, such as:

- *CRM-based solutions are not neutral to all front- and back-office systems. The functionality and data stored in the CDI solution is guided by CRM user-interface requirements, and not from the point of view of all business applications that consume customer data.*

- *CRM databases were designed from the point of view of supporting a CRM application, and not to be a stand-alone customer hub. Their business services are not process neutral and their functionality is not designed from the point of view of process-neutral customer data integration.*

- *CRM-based solutions can be inflexible and difficult to extend and customize. (For example, data attributes and entities are not easy to extend and configure to meet customer requirements, as well as the fact that the APIs are inflexible in the sense that they cannot be used as services to easily build composite transactions, or to be re-aliased to become finer-grained transactions and so on). Extensions must be done in a strictly controlled, proprietary environment using proprietary tools; this inflates the TCO of these solutions.*

- *They do not have the business logic and services to operate as a stand-alone customer hub and cannot easily integrate into other systems. Most importantly, CRM systems are not designed to meet the demanding performance and scalability requirements of an enterprise customer hub.*

Data warehouses and analytics

Data warehouses and analytics systems have been instrumental in allowing organizations to house and analyze large amounts of customer data as well as other vital data related to customer transactions. These systems continue to provide a great deal of value as nonoperational, offline systems that function to produce insight and business intelligence. However, they are not designed to manage operational customer transactions in real time. The insight that they offer needs to be "operationalized" by including it in the customer hub. Therefore, WebSphere Customer Center is complementary to existing data warehouses and analytics environments in two ways. First, WebSphere

Customer Center can be a source of better operational customer data for the data warehouse to analyze. Second, WebSphere Customer Center takes the insight created by analytics systems (customer value, profitability scores, propensity to buy, propensity to churn and so on) and makes it available to operational processes. That allows organizations to combine their operational and offline single customer views to improve closed-loop marketing processing (see Figure 2).

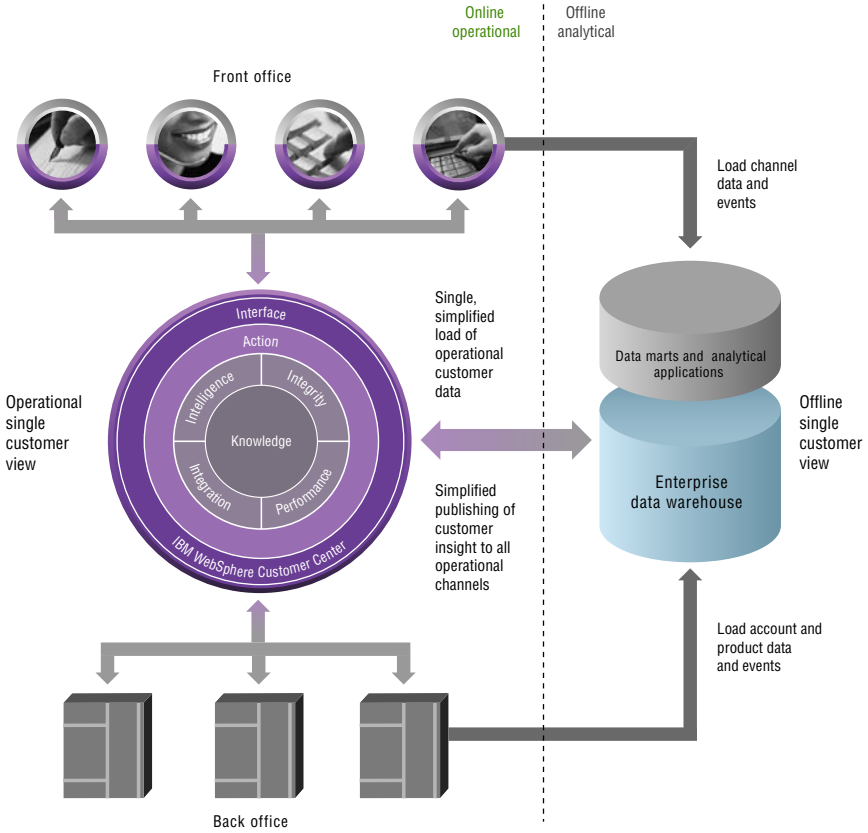


Figure 2. Data warehouses and analytics

Business process management and enterprise application integration tools

CDI hubs are complementary to business process management (BPM) and enterprise application integration (EAI) solutions, and in fact, BPM tools drive the demand for CDI hubs. BPM and EAI tools are designed to integrate applications and to manage long-running business processes, sometimes called macro flows. A typical BPM and EAI process enabled with existing systems is shown in Figure 3. No one system manages the master customer record. The central concepts within this business process are account, bill and customer, yet only account and bill have a system to manage master data for those concepts (that is, a system of record for that data). The process fails because it cannot obtain data on identifying customers, their existing relationships and profile data. When organizations attempt to inject customer-centricity into their processes using BPM and EAI tools, they quickly uncover the need for a customer master data management solution.

Central concepts in the business process must be managed by separate application infrastructure components—commonly called data hubs. Each central concept—customer, product, account, among others—requires a

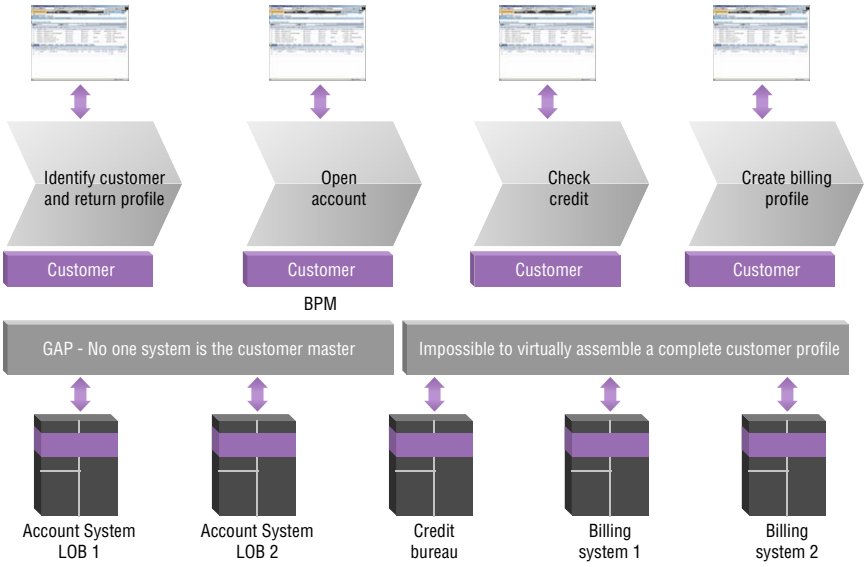


Figure 3: Example of a customer-centric process being supported by account-centric master data.

separate master data management component. Therefore, as organizations adopt business process management and application integration, they uncover and drive the need for CDI hubs. CDI hubs are completely complementary to BPM and EAI solutions. CDI hub services represent the micro flows that form part of the overall macro flow managed by the BPM and EAI application. For example, the CDI hub contains services for adding and updating customer data, which can be included as separate micro flows in a larger business process management by BPM and EAI (for example, opening an account).

Data integration—extract, transform, and load and enterprise information integration tools

CDI hubs are complementary to extract, transform and load (ETL) tools. These tools facilitate database-to-database level integration between applications, specifically for batch-file processing. ETL tools are commonly used to extract data from other applications that contain customer data, transform the data into a specified format and deliver a load file (batch file) to the CDI hub for processing. ETL tools are fundamental to the data integration infrastructure that supports CDI hubs.

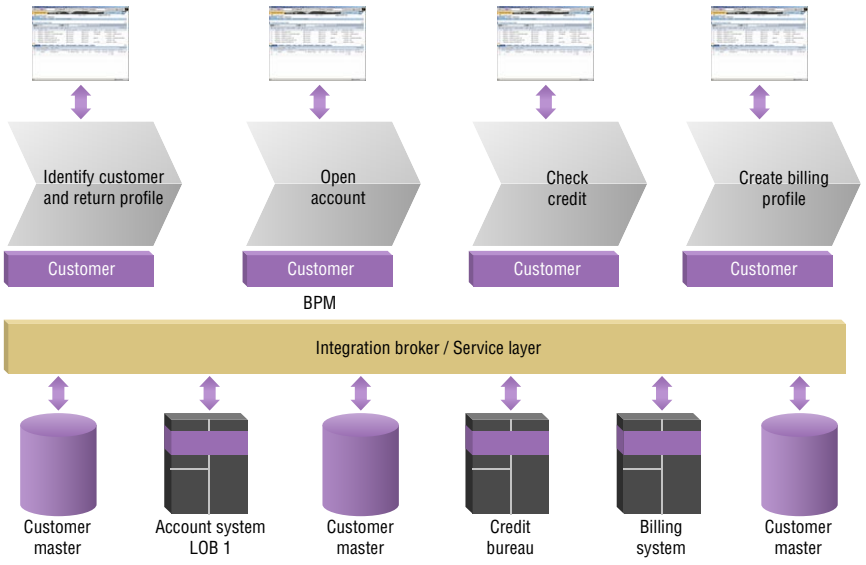


Figure 4. Example of the same business process with supporting customer master data management application infrastructure

CDI hubs are complementary to enterprise information integration (EII) tools, as well. EII is used to manage federated queries (inquiry services) across multiple data stores. EII tools can be used to extend the core services of the CDI hub to retrieve data from other "systems of record" for related data (for example, to return up-to-date account information from an account system as part of a party profile inquiry). CDI hub services should be able to incorporate EII functionality in order to offer hybrid (persistent and nonpersistent) implementation options.

Putting it all together—the information management solution stack

The market is moving from an architecture dominated by inflexible business applications to an open, componentized SOA in which business processes and business applications can be dynamically assembled. Old architectures (see Figure 5) were dominated by business application suites, which encompassed the business application, cross-application processes and even embedded application infrastructure components (for example, CIFs). This architecture is extremely inflexible and locks the client into using the entire application suite in order to manage a business process.

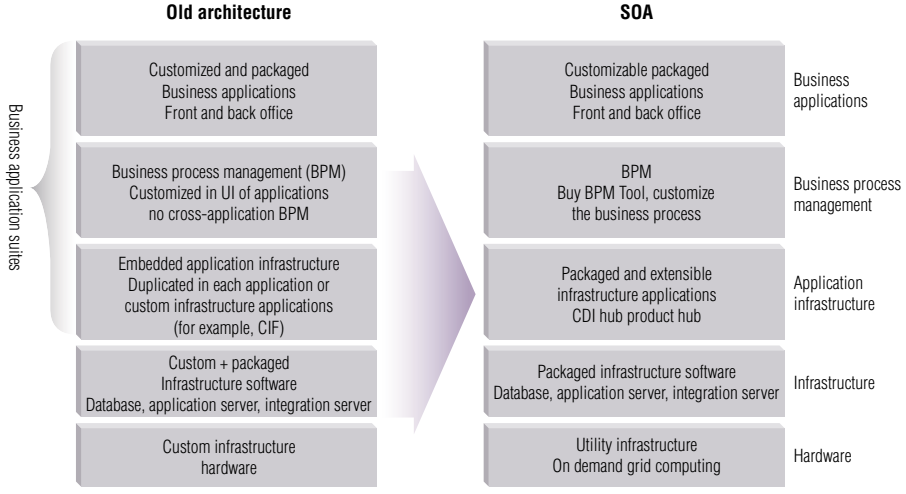


Figure 5: Old architecture and service-oriented architecture examples

The emergence of SOAs has brought significant change—the most significant of all being the decoupling of each application layer. Business applications suites have been broken into their component pieces, which affords greater flexibility in business process design and management. The business applications of today are built upon open and neutral components, and each layer should be neutral to the layer above it. For example, application infrastructure (master data management hubs) must be process-neutral in order to support a variety of business process management tools and industry-specific processes. CDI is an application infrastructure component that is designed to be process and business application neutral. Many traditional application-suite vendors who offer "CDI hubs" are not offering true application infrastructure. Their CDI hubs are not process-neutral, and in fact, they embed the business process within customer data services. This is really a repackaging of the old application suite approach and is designed to lock organizations into a large and proprietary application suite.

The ultimate benefit of a true SOA is twofold—flexibility to adapt to business changes, and lower cost of ownership.

Comparing different approaches to CDI

Companies can take different approaches to implementing and using CDI solutions, which are outlined in the following sections.

CDI solutions—reference data customer hub

Most virtual reference hub CDI vendors have adopted a hybrid approach in which vendors persist some data and link to other data items, largely because a pure virtual approach has proven to be completely impractical. These vendors offer “”reference data” functionality to build metadata models and manage multiple source-system load files to build a customer master file. These solutions are focused on managing multiple source input files, determining if data has changed, and then loading it to a master database. From the data master, they perform data-quality and stewardship processes, and then extract the file to load to other systems. Reference data CDI solutions do not have a predefined data model and therefore cannot have predefined business services for managing customer data.

Most of these hybrid “reference hub” CDI vendors claim that transaction hub CDI solutions are inflexible because they contain a predefined physical model with business services as part of the software package. The reasons for the predominance of the transaction hub approach are:

- *Transaction hub CDI solutions are flexible. WebSphere Customer Center offers many customization mechanisms, including user-definable values, extension and additions through dynamic attributes, a business rules engine and the construction of composite services using a componentized design. Organizations are able to customize the application as required without changing the core application itself.*

- *Ultimate flexibility comes at a price. No one would chose to build a solution from the ground up if their requirements were met by a packaged solution. The fact is that customer data management requirements are remarkably similar across industries. Customers in all industries have personal data, relationships,*

address and contact points, preferences, and relationships to products, among other data items. In our experience, the majority of organizations have an overlap in customer requirements of well over 90 percent, with only a small amount of customization required. It is not cost-effective or even required to build a solution from scratch using a reference-data tool. The cost of building a data model and hundreds of business services from the ground up is very significant, which plays to the reference hub CDI vendors' approach of driving significant consulting and services revenue based on their tools. Based on our experience, many organizations have examined both approaches to CDI with cost-benefit analysis and have found that the reference hub CDI approach costs far more over time.

- *Reference-hub tools are not widely adopted for a build-your-own approach. Most reference-hub CDI solutions are implemented in a batch, ETL-like manner and they seem to compete more directly with those solutions (batch data quality). In other cases, reference-hub CDI vendors offer EII functions for view-only federated queries. Most companies that decide that they need ultimate flexibility and want a transaction-hub CDI solution have built a custom solution in-house. This alternative has become far less common as packaged applications have become widely available. Based on that evidence, one can conclude that a reference data CDI solution is an inadequate tool to build a transaction hub, for the following reasons:*

  - *It has not been proven to perform. Reference-hub CDI solutions are designed with a multiple-data-source paradigm. They are not built with efficiency as a key requirement—and therefore cannot handle the volumes required for operational transaction processing.*

  - *The TCO is significant. Reference-hub CDI solutions are based on a meta model. They produce volumes of data about the data they will access or persist. This exponential increase in data increases the cost of ownership for data storage and access; organizations have judged these applications to be far too costly to run in production for even modest transaction volumes.*

- *Transaction-hub CDI vendors now offer reference functionality and virtualization options. WebSphere Customer Center contains functions for maintaining reference metadata on customer records (cross-reference links for parties and accounts, source system metadata, data aging and decay, and so on). WebSphere Customer Center has proven integration with leading EII solutions and has used those solutions to integrate with data from other source systems; data from other systems can be accessed using standard WebSphere Customer Center business services for real-time access. It is logical to select a CDI solution that has solved the toughest problem first (transaction processing) and integrated with solutions to solve the easier "inquiry-only" virtual model. There is a risk associated with betting that a simple reference-data CDI tool will one day address the transaction-processing issues faced by transactional CDI hubs. Organizations need to carefully examine these risks.*

- *Reference hubs are a point-in-time asset offering no future road map and upgrade path. Reference hubs offer a tool that can be built upon. After they have been customized, those solutions do not have a future road map upgrade path as they are custom solutions. The client is left with the responsibility and cost of maintenance, product support, adding new features and functions, and the significant cost of migrating and keeping up with infrastructure platform releases. WebSphere Customer Center is a fully supported application with a future product road map and upgrade path. WebSphere Customer Center users have customized the solution and have taken upgrades to the core product, allowing them to benefit from the ongoing WebSphere Customer Center product development.*

CDI solutions—persistent customer transactional hub

This solution represents a holistic approach to customer data integration and management. The transactional customer hub maintains the authoritative customer record in real time. All customer knowledge and insight is integrated with operational processes and customer-facing systems through shared business services. Customer-centric business processes (composite transactions such as new business processing) are managed by the customer hub, enabling once-and-done processing for customer data.

The customer hub maintains new customer knowledge and processes, such as cross-channel interaction history, privacy profiles, customer relationships, event notifications and rules of visibility, among others. The transactional customer hub solution is the foundation for an operational customer-centric service and sales strategy. Organizations can use the customer hub to inject customer knowledge and marketing insight into all operational processes. This enables organizations to realize strategic goals of increasing revenue to share the wealth among their existing customer database, acquiring new customers, reducing administrative costs by improving efficiency, improving customer service and retention, and complying with privacy regulations. WebSphere Customer Center falls into the category of a transactional, persistent CDI solution.

Building the business case for CDI

The business case for CDI solutions has four essential components: benefits of the solution, cost, time and risk. Before choosing a CDI solution, organizations must evaluate them based on all four criteria. Each of these criteria is examined in detail in the following sections.

Benefits

CDI solutions create significant benefits across many functional areas of the organization. Essentially any operational business function that uses customer data can benefit from improved customer data management enabled by CDI solutions. There are four components of the CDI business case that must be evaluated: cost reduction and avoidance, customer service and retention, increased revenue, and enabling strategic objectives (see Figure 6). Not all CDI solutions are equal; the ability of a CDI solution to deliver on these benefits depends upon its functionality. Each of these aspects is examined in more detail in the following section.

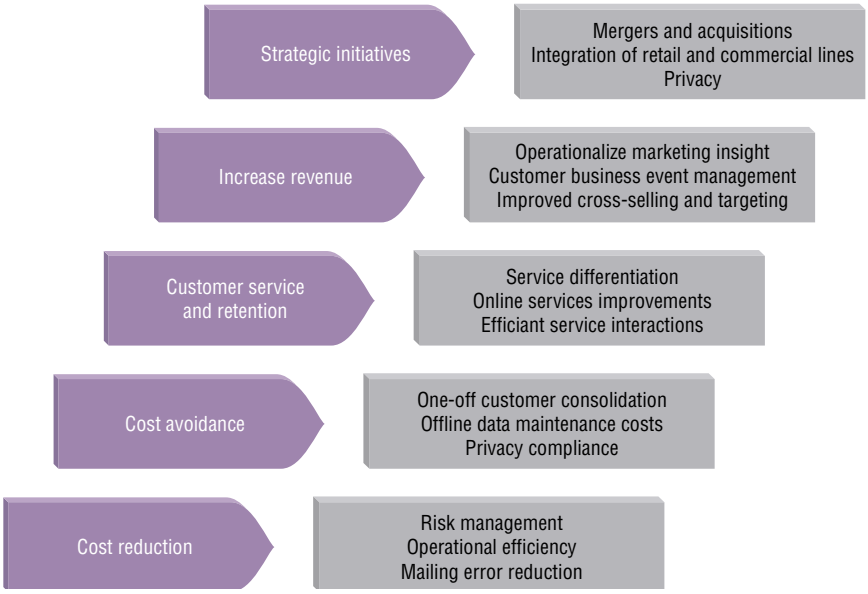


Figure 6. Building a business case for CDI

Cost reduction and avoidance

The cost of bad customer data is staggering. Consider the following statistics on customer data integration in the United States:

- *Over 40 million Americans move annually. On average, a 16 percent of an organizations customer base changes addresses each year.*[1]

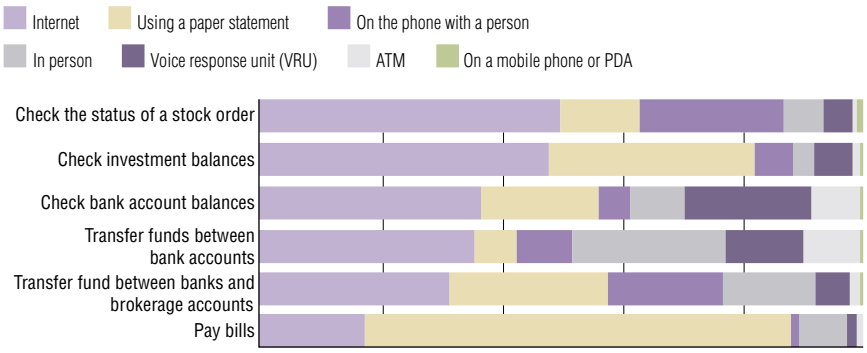
- *Two percent of customer information becomes obsolete every month (customers move, die, divorce and so on).*[2]

- *There is a US$611 billion annual loss to U.S. businesses from postage, printing, and staff overhead associated with bad customer data.*[3]

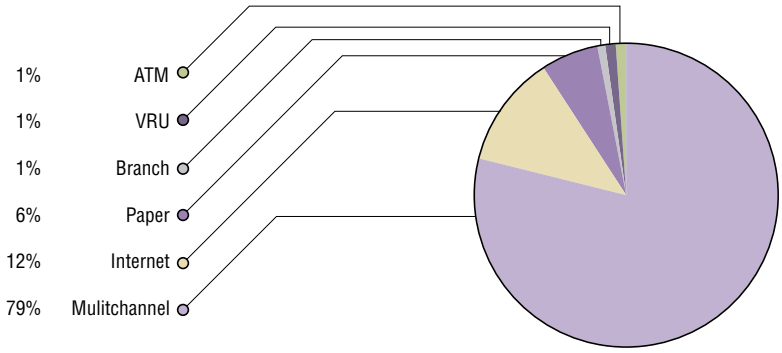
- *Larry English, a leading authority on data quality issues, writes, "…the business costs of nonquality data, including irrecoverable costs, rework of products and services, workarounds, and lost and missed revenue may be as high as 10 to 25 percent of revenue or total budget of an organization."*[4]

Bad customer data is a business process issue, not a data issue. Organizations cannot fix bad data issues by pulling data into a warehouse, cleaning it, and inserting it back into operational systems. There are many ways to add customers and update their data across multiple systems. Because system data is not managed consistently in one system of record, it can become corrupt. Many organizations attempt to consolidate customer data in a warehouse and refresh that data on a weekly or monthly basis. This approach does not address bad operational customer data and does not address the costs outlined above. Most of the cost savings come from reducing errors and inefficiencies in operations (customer service, billing and statements, sales, and so on). Therefore, the real challenge for organizations is to maintain an operational customer master file. The following figures illustrate the cost of bad operational customer data from various industries in the United States.

How do you usually do each activity?



Few consumers stick with one channel.



- *A telecommunications firm lost $8 million a month because data-entry errors incorrectly coded accounts, preventing bills from being sent out.*

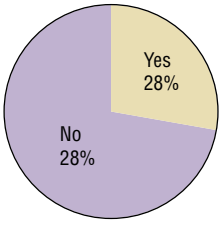
- *An insurance company lost hundreds of thousands of dollars annually in mailing costs (postage, returns, collateral, and staff to process returns) due to duplicate customer records.*

- *An information services firm lost $500,000 annually and alienated customers because it repeatedly recalled reports sent to subscribers due to inaccurate data.*

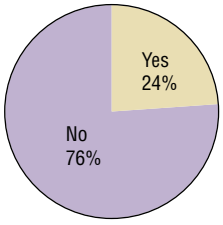
- *A large bank discovered that 62 percent of its home-equity loans were being calculated incorrectly, with the principal getting larger each month.*

Source: May 2002 Forrester Report "Benchmark North America: Consumer Technographics Data Overview"
Base: North American online consumers who do more than one type of transaction
Base: 25 financial institution executives

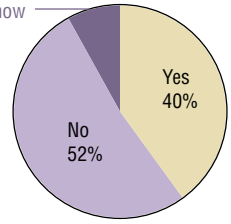
Firms can't deliver cross-channel customer experiences.



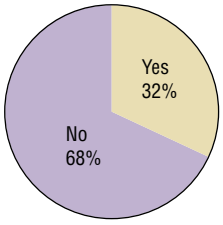
A customer researches a product online and starts the application online—then opts to finish the process offline with a representative. Can the representative see what the customer had completed on the Web and finish the process offline?



A customer is conducting her first online trade bill pay and has questions on how to complete the transaction, so she calls the call center. Can the rep see what the customer is on and instruct her on how to complete the transaction?



A customer conducts a self-service function online to change his address. Is the result an address change that gets done for ***all*** deposits, credit, and investment products he owns with the institution?



A customer receives a target e-mail announcing a special offer on one of your products. Can the customer go into a branch to open the product, and will the sales representative be aware that the customer had been targeted for the offer?

Figure 7b. Consumers use multiple channels

- *A health insurance company in the Midwest delayed a decision support system for two years because the quality of its data was suspect.*
- *A global chemical company discovered it was losing millions of dollars in volume discounts in procuring supplies because it could not correctly identify and reconcile suppliers on a global basis.*
- *A regional bank could not calculate customer and product profitability due to missing and inaccurate cost data.* [5]

Because the implementation of an operational CDI solution can help avoid such problems, organizations could realize significant cost savings and reduction.

Source: May 2002 Forrester Report "Benchmark North America: Consumer Technographics Data Overview"
Base: North American online consumers who do more than one type of transaction
Base: 25 financial institution executives

Customer service improvements and retention increase

Operational CDI solutions can help improve service by providing an authoritative customer profile to all channels. This allows service channels to identify high-value customers and provide differentiated service, while also ensuring accuracy of service across channels and product lines based on a consistent view of the customer. Customers are using multiple channels to interact with the organization, often within the context of a single business process. Organizations that do not share a unified customer view across multiple channels are unable to provide seamless multichannel integration. This results in poor customer service and retention issues. In addition, customers are dissatisfied with frequent errors and inefficiencies, which also causes retention issues.

Operational CDI solutions help improve customer service and retention by providing all channels with an accurate and complete customer profile. This allows for differentiated and streamlined customer service processes, which reduces customer churn.

Increase revenue

Operational CDI solutions help organizations increase revenue in a number of ways. First, CDI helps organizations understand the customers and all of their relationships. This complete and authoritative customer profile can be provided to sales applications and agents to improve their ability to make targeted product offers. Second, CDI is a single point for all customer transactions. It therefore is a logical place to detect and manage customer events (business events, life events and so on) and to take appropriate actions based on those events. In essence, CDI solutions must be "intelligent" operational systems that communicate events to other systems. Often, those events can trigger cross-selling opportunities for additional products. The ability to communicate those events in real time improves cross-selling rates. Finally, CDI solutions

"operationalize" marketing insight generated from offline applications like data warehouses, analytics and marketing campaign systems. This information (customer profitability, existing campaigns, next product offers) is shared with operational channels and systems to infuse service interactions with sales content. CDI solutions contribute significantly to revenue improvements when deployed across multiple product lines.

Facilitate regulatory compliance

CDI solutions help facilitate regulatory compliance for processes that require customer data. For example, CDI hubs help companies comply with privacy and data-sharing regulations by managing customer-data-sharing preferences, providing a single process for updating those preferences, and providing a component

for managing data access and visibility rules to enforce those preferences across all operational applications. CDI hubs help organizations comply with risk management, privacy and data-protection regulatory requirements in a quick and cost-effective manner.

Enabling strategic objectives

CDI solutions help organizations achieve strategic objectives that often result in a significant competitive advantage for organizations. One example is mergers and acquisitions (M&As): CDI helps companies integrate acquired company's systems more quickly and efficiently by providing a single point to integrate customer data, while leaving the existing product and channel systems in place. This allows organizations to decouple the business case into cross-customer base synergies (facilitated by CDI) and process efficiencies gained from system migration. Often, organizations can gain a competitive advantage in M&A and are able to bid more competitively on businesses based on their faster time to value through CDI.

Finally, CDI solutions help organizations with strategic commercial and retail integration projects. CDI manages commercial and retail data and understands commercial "persons" with retail relationships, thus improving customer service and sales processes across both lines of business.

Cost of the solution

The second key factor in the CDI business case is cost—or more accurately, the TCO of the CDI solution. Most organizations look to commercially available CDI solutions instead of in-house built solutions because the TCO of those solutions is lower. In-house built projects incur design and development costs that have been borne already by the independent software vendor (ISV) of the CDI solution. In addition, organizations can reduce their cost of maintenance with packaged solutions by avoiding the "hidden" in-house costs of new platform support (databases, and so on).

Among commercially available CDI solutions, the TCO varies widely. There are a number of factors that alter TCO:

CDI functionality. Cost is largely dependent on the CDI solution's ability to meet the organization's requirements. Neutral and independent CDI solutions have a lower cost of ownership than CDI solutions derived from application suites (the customer portion of front- or back-office applications). Often, CRM vendor-retrofitted CDI offerings require significant customization work in order to have the same functionality as purpose-built CDI solutions. There have been many well-publicized CRM project failures that are due to poor data quality, which raise doubts as to the effectiveness of the CRM vendor's CDI solutions. The following quote from The Data Warehouse Institute states:

"According to TDWI's 2000 industry study, the top two technical challenges facing companies implementing CRM solutions are 'managing data quality and consistency' (46 percent) and 'reconciling customer records' (40 percent.) Considering that 41 percent of CRM projects were 'experiencing difficulties' or 'a potential flop,' according to the same study, it's clear that the impacts of poor data quality in CRM are far reaching."[6]

Flexibility. CDI solutions must be flexible to accommodate the organization's specific needs. In order to meet those needs in a cost-effective manner, CDI solutions must have well-defined extension and customization mechanisms. Organizations can further reduce their costs by leveraging skills from their IT teams, meaning that extensions and customizations that can be built in commercially available development environments are more cost-effective than proprietary development environments.

Deployment and architecture. CDI solutions that run on commercially available infrastructure software (databases, application servers and so on) are more cost-effective than CDI solutions that run on proprietary infrastructure. This helps organizations reduce hardware and staff training costs.

Time

The time to implement CDI solutions is related to the cost—increased implementation time means increased IT staff and consulting costs incurred by the organization. It also impacts the business case by delaying the time to value (and therefore increasing the time period and cash discount of future benefits weighed against costs incurred today).

Time to value is shortened by two key factors. The first is overall product fit (functionality and extensibility). As mentioned before, purpose-built CDI solutions are a closer fit with an organization's requirements and often can be implemented more quickly. The second is ease of integration. It is important for organizations to evaluate CDI solutions based on their ability to integrate through various real-time and batch interfaces.

Another key factor in integration is a proven CDI implementation methodology. Organizations must evaluate CDI vendors based on their experience and customer reference base for both the product and a proven CDI implementation process.

Risk

Risk is perhaps both the most significant and the most overlooked aspect of CDI business cases. The critical point is that different CDI solutions have different risk factors, and those must be factored into the business case for CDI by adjusting the risk-adjusted rate of return for future benefits. There are many aspects of risk that an organization must evaluate:

- Project experience and previous failures. *Organizations must examine the CDI vendor's previous track record with large-scale projects. Many CDI vendors propose aggressive and unrealistic timelines, while having no experience in implementing CDI solutions. Organizations must ensure that their chosen CDI vendor has experience in implementing large projects and has a track record of success with those projects.*

- Integration functionality. *CDI solutions must have sophisticated integration and interface functionality that allow them to integrate with other applications and integration hubs (for example, EAI). Proven interfaces that allow CDI solutions to be easily integrated will reduce implementation risk.*

- Ability to meet functional and performance requirements. *CDI solutions that meet functional and performance requirements out of the box will require less customization at implementation time, which will reduce performance risk in production.*

Organizations must assess the risk of each CDI alternative and accurately use that risk assessment to discount the benefits of each CDI solution alternative. The key point is that different CDI solutions have different implementation risks, and the organization must evaluate that risk based on the CDI vendor's production references and previous implementation case studies.

Conclusions on the CDI business case

Organizations can realize significant benefits from CDI across many functional areas in terms of cost savings, customer service improvements and increased revenue. In order to properly assess the relative business value of CDI alternatives, organizations must evaluate their TCO, the time to implement and the risk of each alternative—as they all factor into the net present value of the business case.

WebSphere Customer Center is the leader in operational CDI because it has proven and successful implementations and production reference customers. WebSphere Customer Center provides the best overall business value for CDI due to its broad functionality, low TCO, its ability to be integrated more quickly than other CDI solutions, and the fact that it has the lowest risk of any operational CDI solution.

WebSphere Customer Center delivers significant business value

WebSphere Customer Center is the industry-leading transaction hub customer data integration solution. It has proven implementation with the largest organizations in multiple industries. WebSphere Customer Center maintains the single version of the customer truth, and provides that knowledge to all channels and systems in real time.

WebSphere Customer Center manages customer-centric transactions, from simple customer data updates to complex business processes such as customer acquisition and new business processing. WebSphere Customer Center injects marketing insight and customer knowledge into the operational processes of the organizations, enabling improvements to sales and service processes based on complete customer knowledge.

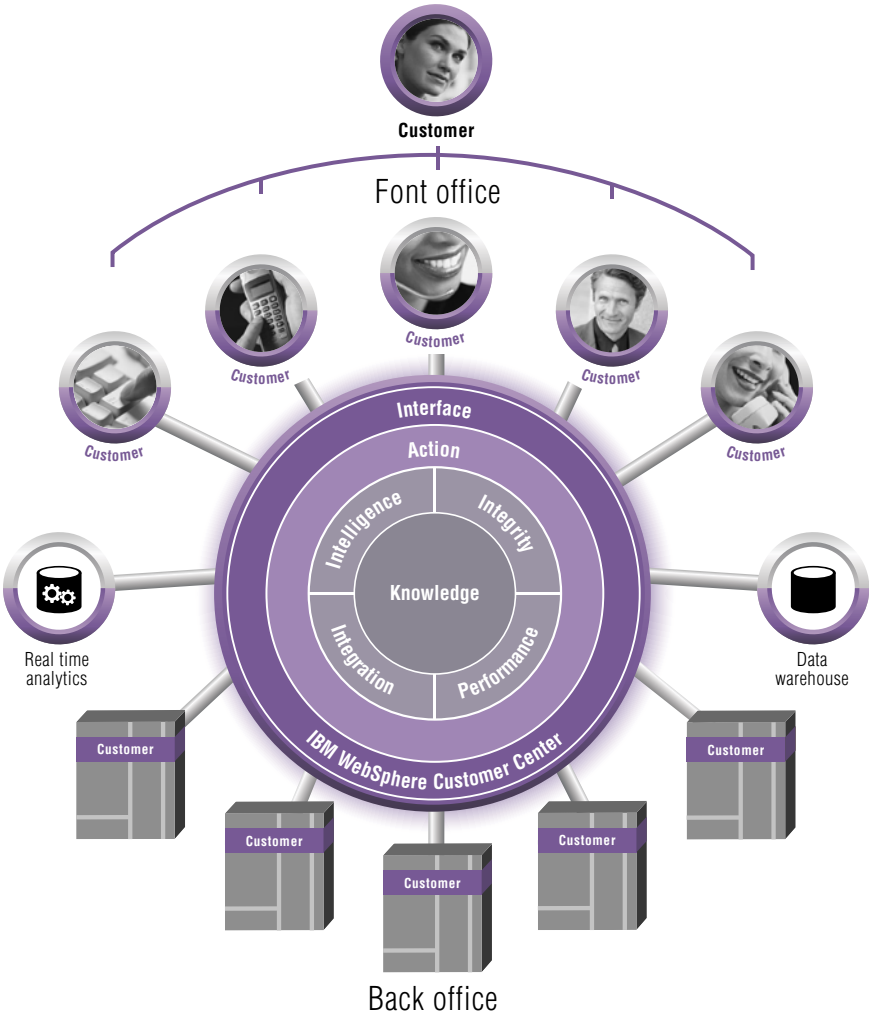


Figure 8. WebSphere Customer Center delivers significant business value through a foundation of unified customer data to all channels.

WebSphere Customer Center—Industry Leader in Customer Data Integration

Leading industry analysts recognize WebSphere Customer Center as the pre-eminent customer data integration (CDI) solution. There are a number of reasons why WebSphere Customer Center is the leading CDI solution, including the following:

- *WebSphere Customer Center is a real-time, transactional application. It contains over 480 java business services that manage customer data inquiries and updates as well as complex customer business processes.*

- *WebSphere Customer Center contains flexible business logic to manage those transactions, which allows it to act as a customer-centric business process hub.*

- *WebSphere Customer Center operationalizes customer insight and knowledge. It maintains marketing department customer insight, such as household data, customer value scores, profitability indicators, propensity to churn, etc., and injects that insight into operational processes. For example, when a customer calls the call center for an account inquiry, WebSphere Customer Center provides the customer profile. That profile includes recent campaign information, the customer value indicator, and product offers. This insight may be used by the service channel to inform service treatment, and to leverage the service engagement into a sales opportunity.*

- *WebSphere Customer Center is an intelligent, active customer hub. As opposed to passive systems that only accept updates, WebSphere Customer Center contains several components that are integrated with its action layer business services to provide intelligence to those services. Examples include business rules, event management, rules of visibility and data entitlements, party matching and data stewardship, and data validation rules.*

- *WebSphere Customer Center manages customer events to derive real-time customer insight. All customer transactions flow through the customer hub. WebSphere Customer Center detects customer events and provides insight on the context of that event (customer life events - getting married, moving, etc.) based on the customer's profile (e.g., their profitability, portfolio, etc.). Once identified, WebSphere Customer Center provides context to the customer event (whether the event is a sales opportunity, critical data change, etc.). It then communicates that event to relevant systems via real-time event notification.*

- *WebSphere Customer Center manages 'net new' enterprise customer data and business processes. This includes privacy profiles, cross-channel interaction history, customer relationships and groupings (households), customer values, duplicate suspect processing, and event notifications, among others. This 'new' data is not stored in traditional systems. It is critically important because it enables the organization to alter its operational processes to be truly customer-centric.*

- *WebSphere Customer Center can be the system of record for customer knowledge across the enterprise. It is the authoritative copy of customer information. WebSphere Customer Center has a comprehensive customer data model that is flexible to support multiple industries and line of business requirements.*

- *WebSphere Customer Center is designed within a service-oriented architecture. From its initial release in 1999, it was designed and implemented as a customer hub whose primary interface was its services layer, which was integrated with both front and back office systems.*

- *WebSphere Customer Center has proven to be the leading CDI solution in terms of massive performance and scalability. It has exceeded rigorous benchmark requirements of over 100 million customers and has produced transaction response times of 120 milliseconds on operational transactions.*

- *WebSphere Customer Center is developed on leading technology and has an open architecture. WebSphere Customer Center is a J2EE application. It is fully componentized and has an open architecture, enabling it to be extended and customized. WebSphere Customer Center is a black box core software product that has an ongoing product roadmap and significant R&D investment.*

- *WebSphere Customer Center contains multiple sophisticated interfaces. This enables it to be easily integrated with other systems and Enterprise Application Integration (EAI) solutions and to support a variety of messaging standards and transaction protocols.*

- *WebSphere Customer Center has proven implementations with customers in production.*

The CDI life cycle

WebSphere Customer Center is the only operational CDI solution with proven, in-production implementations for its clients. As a result, WebSphere Customer Center has years of experience in implementing CDI solutions. In addition, WebSphere Customer Center has experienced Systems Integrator partners who are capable of implementing their solution. WebSphere Customer Center has also developed several CDI-specific training courses that enable clients to become self-sufficient as quickly as possible.

The concept of the CDI life cycle is born from the significant experience of WebSphere Customer Center in implementing its CDI solution. In the significant WebSphere Customer Center client base, no two CDI implementations are exactly the same. What's more, no two CDI implementations began in the same manner. The concept of the CDI life cycle is simple—CDI is a journey. Each organization will begin the journey from a different starting place, and each will take a different route to their ultimate destination. The CDI life cycle is based on the following key principles:

Multiple approaches to CDI

There are multiple approaches to CDI. These range from batch-oriented data quality implementations to service-oriented system of record. Often, organizations implement one aspect of CDI, and complement it with a different approach in a subsequent phase:

- *Organizations will begin their CDI journey in different places. Organizations often begin CDI with a tactical project that encompasses customer data management. These projects form a logical phase 1, which is the deployment of the CDI solution, usually in conjunction with another application or user interface.*

- *There are different "flavors of CDI," and no single approach is right for every client. CDI ranges from batch data quality implementations, to augmentation approaches, to full system of record deployments within an SOA. No one approach is correct for all companies across all industries.*

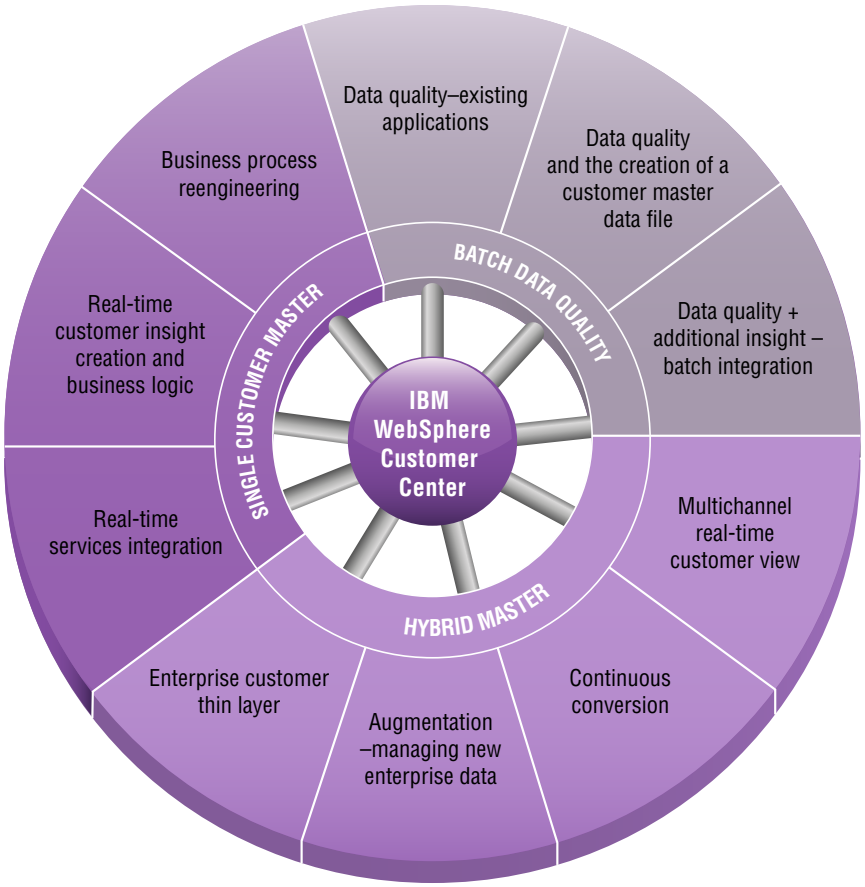


Figure 9. Various stages in the CDI lifecycle

- *Clients will often implement multiple CDI approaches simultaneously. Often, organizations will implement multiple flavors of CDI along their journey to address multiple tactical projects, with the end goal being the strategic management of all customer data within one application as the driving vision. The CDI solution must be capable of supporting multiple CDI approaches in a simultaneous manner.*

Batch data quality

There are numerous approaches to a batch-oriented CDI strategy. They range from improving data quality within existing applications through recognition

and data cleansing, to creating a customer master file in batch as data is synchronized across multiple applications. Often, organizations will add insight-generation rules to monitor customer data changes (for example, when a customer moves, send an event notification message to the sales force automation (SFA) system and so on). Clients can also add customer data from certain systems (typically existing back-office systems) for view-only purposes and continue to populate customer data to the master from the old "source" systems.

Hybrid master

There are numerous methods of building CDI functions that complement the client's existing architecture and customer data applications (for example, an existing customer information system or file). Clients often augment an initial batch CDI approach with a single channel or multichannel real-time view of customer data. That phase typically involves view-only functionality for customer data that continues to be maintained in legacy "source" systems. Continuous conversion projects typically focus on a net new enterprise data item and allow for the CDI database to be populated over time; common examples include privacy preference management or service preference management, which are populated as the customer interacts with the organization. Augmentation approaches typically focus on an area of "new" enterprise data not contained in the current customer information system or file, and manage that data as an augmentation to the core CIS and CIF. Examples often include preference data, interaction history, e-service and e-mail information. Another hybrid approach involves an enterprise thin-layer deployment, in which customer data is referenced across multiple product lines or lines of business. Only a thin layer of linking data, as well as complementary new data (such as preferences, address usage and so on) are maintained at the enterprise level, whereas multiple legacy line-of-business CIS and CIFs continue to manage core customer data. The CDI solution helps synchronize changes across multiple LOB systems and to recognize the customer at the enterprise level.

System of record customer master

Single customer master approaches range in intensity and complexity. Often, the CDI solution is integrated in a real-time services integration with other business applications. Customer data can be synchronized across applications existing databases, or those applications may be repurposed to make real-time services calls to the CDI solution. Real-time business rules and customer insight enable on–the-fly customer matching, data quality, event management and data access rules. Single customer master implementations enable business process reengineering; clients often map the CDI solutions business services to EAI and BPM solutions that are designed to orchestrate enterprise business processes. Clients will often look to reengineer processes to capitalize on the wealth of customer data and insight held within the CDI application, which allows them to transform processes to be customer-centric.

Choosing a CDI strategy

Organizations are often led to believe by one-dimensional CDI vendors that CDI implementations involve only one approach—be it batch CDI data quality, or view-only functionality. The truth is that CDI can and does involve all of those approaches, and any single client implementation can involve multiple approaches simultaneously. WebSphere Customer Center has experience in implementing multiple approaches to CDI with the same CDI application. Based on that experience, the proven WebSphere Customer Center implementation methodology accommodates the following factors: WebSphere Customer Center is the only CDI solution that has experience in multiple flavors of CDI implementations. WebSphere Customer Center is designed to be implemented and to address requirements at all phases of the CDI life cycle, which makes it a strategic investment that meets present and future business requirements.

- *The choice of implementation strategy, and the order in which multiple systems are integrated with the CDI hub, is entirely dependent on the business case for the strategic CDI solution. Organizations have different business goals and internal factors that will affect the choice of strategy and prioritization of the implementation road map.*

- *Clients will have multiple flavors of CDI implemented simultaneously. Clients will need to evaluate CDI solutions based on their ability to support multiple approaches simultaneously.*

- *Clients will base the decision to implement multiple CDI approaches on their business case. In some cases, the CDI application can continue to support batch "source" system feeds for some product lines or lines of business, while being the customer master for other lines, simply because the business case does not support a more holistic CDI approach for all lines of business.*

WebSphere Customer Center is the only CDI solution that offers experience in multiple flavors of CDI implementations. WebSphere Customer Center is designed to be implemented and to address requirements at all phases of the CDI life cycle, which makes it a strategic investment that meets present and future business requirements.

Conclusion

Customer data integration (CDI) solutions are application infrastructure components that manage master customer data for all operational applications. CDI solutions maintain a single, unified version of the customer truth for all operational systems in real time. Organizations can realize significant return on investment from CDI. Typical areas of savings include cost savings and avoidance, customer service and retention improvements, increased revenue, and other strategic concerns such as mergers and acquisitions. In order to determine the relative value of different CDI solutions, organizations must examine the functionality, TCO, and potential risk of each solution. WebSphere Customer Center is the recognized leader in the Operational Customer Data Integration space. It contains industry-leading functionality (business services plus intelligence and integrity components) for managing customer data within an SOA.

For more information

To Learn more about IBM WebSphere Customer Center Software, visit:
ibm.com/software/data/masterdata/launch.html

1 US Postal Service. 2 *Data Quality and the Bottom Line*, The Data Warehouse Institute. 3 Ibid. 4 L. English. *Improving Data Warehouse and Business Information Quality*. New York: John Wiley & Sons, 1999, p. 12. 5 All examples cited from The Data Warehouse Institute, Data Quality and the Bottom Line. 6 The Data Warehouse Institute

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